William Chargin

git.io/wc • wchargin • wchargin
Computer Science, Cal Poly San Luis Obispo

Please visit my website at git.io/wc for an interactive résumé, and more up-to-date and detailed project descriptions.

Experience

Cal Poly Computer Science Department — **San Luis Obispo, CA**
Instructional Student Assistant, Fundamentals of Computer Science II — *Fall 2014–present*

- Designed, implemented, tested, and documented a flexible and extensible automated grading system. (See *Projects* below.)
- Created grading scheduler, and integrated with `cron` to create a completely hands-off grading process.

Army High Performance Computing Research Center — **Stanford University**
Student Researcher — *June–August 2014*

- First pre-undergraduate student ever admitted to this research program.
- Developed real-time physics simulations on low-powered portable devices. (See *Projects* below.)
- Received verbal commendation on excellence of research report.

Model United Nations (League of Creative Minds) — **Burlingame, CA**
Head Delegate; Undersecretary-General of Technology and Innovation — *2011–2014*

- Developed a unified debate management system, facilitating timing, voting, speech analysis, etc. (See *Projects* below.)
- Chaired debate committees, and delivered technical and scientific briefings to students.
- Ran technology (mainly AV, networking, communications) for about a dozen conferences over three years.

Selected projects

Automated grading system — Bash, Java

- Automatically tests and grades student work for style and correctness, according to customizable and extensible grading modules.
- Grades and archives all student work at assignment due dates, and immediately emails students with helpful feedback.
- Includes tool to efficiently manually investigate failing submissions, to ensure that all grades are accurate.

Real-time portable physics — Java, C++

- At AHPCRC, leveraged extensive existing physics libraries for real-time simulation on Android tablets.
- Simulations: articulated rigid body, cloth, smoke, dynamic paint. Rendering: UV mapped textures, fog.
- Designed novel algorithm to distribute points on a 3D triangulated mesh according to a given density function.
- Designed a system to efficiently (amortized $\mathcal{O}(1)$) simulate arbitrarily complex urban environments.

Advanced computer science curriculum — Java, C, Python

- College-level computer science independent study designed by full-time Microsoft Software Engineer.
- Curriculum included algorithms and data structures; concurrency; dynamic programming; image edge detection; and more.
- Public repository available at github.com/wchargin/apcs; interactive demos therein.

Model United Nations debate moderation system — Java

- Created and deployed an application system that unifies the tools that chairs need to aptly moderate debates.
- Implemented networking across multiple computers to maximize efficiency; separate modes for head chair, director, and rapporteur.
- Deployed system at multiple conferences; system used by dozens of chairs and hundreds of delegates.
- Released as open source; available at wchargin.github.io/kiosk/.

Selected computer languages and systems

- **Java 6/7 and Eclipse** (expert); **Python 2, 3** (advanced); **C** (proficient); **HTML/CSS** (advanced).
- **LaTeX** (comfortable); **Vim** (love it); **Blender 3D** (advanced); **Git, GitHub** (proficient).

Selected academic honors

University Honors Program, Cal Poly SLO. Honors Public Speaking: Best Informative Speaker, Best Persuasive Speaker.

Grade 12 Valedictorian. National Merit Scholar. National AP Scholar. California Scholarship Federation Sealbearer. Inter-Departmental Award (inaugural; created for me). Best Mandarin I Student.

Grade 11 Most Outstanding Math and Science Student. Best Junior in Math. Best Junior in Spanish. Best Junior in History.

Model UN Best Delegate (WEMUN 2011, Beijing). Model Diplomat (LCMMUNC 2013), for leadership in technology.